

Work Order ID 69577

Thursday, May 12, 2011 1:30:21 PM



Page 1

Item ID: D206-667-103

Accept



Setup Start



Revision ID:

Item Name: Crosstube Fwd

Stop



Start Date: 5/12/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/2/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: PL Date: 11-05-12 Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D206-667-143	Rev C

100 0.00



DOCUMENT CONTROL

DC

Memo 0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

Sub 4/20

110 0.00



Pick Kit
Packaging

Packaging

Memo 0.00

Packaging

11-06-08

120 0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo 0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-143 using CNC bender program

SAD
TW

11-06-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00

8/11/06/08

0.00



QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.

5-Drill pilot holes as per Dwg D206-667-143. Drill only the top (2) holes.

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.

8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 Inside of Cuff (Do not engrave on outside of tube)

10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

TW
SAD
11-06-08

SAD
TW 11-06-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D206-667-103 PAR #: N/A Fault Category: Landing Gear NCR: Yes No DQA: 1 Date: 11.07.12
 Resolution: Re-work Disposition: Re-work QA: N/C Closed: 1 Date: 11/07/12

NCR: <u>69577</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11.06.15	140	DRILLED THROUGH PART AND MARKED OPPOSITE SIDE ON INNER WALL R.C. LOA	<u>CP</u> 11.06.15 <u>DSI/ML</u>	DRILL OUT HOLE. #	<u>SAD</u> <u>JW</u> 11-06-15	<u>u/06/16</u>	<u>CP</u> 11.06.15 <u>DSI/ML</u>	<u>u/06/16</u>
		<u>Training</u>	<u>CP</u> 11.06.15	ADD DSI 9346 Rev. M TO PAPERWORK	<u>CL</u> 11/07/11		<u>CP</u> 11.06.15	

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 HandFXtube Hand Finishing Crosstubes	Crosstubes Chemical Conversion Memo	0.00 0.00		SAD 11-06-07		(L)			
160 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00		S w/lock					
170 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		S w/lock		(F)			

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

CROSSTUBES

PID: 14300

CL 11/06/11 ①

190

Packaging

0.00



Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

C 4/11/17 ①

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

m 11 06 17 ①

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210		0.00							
	SprayPaint					<u>11</u>	<u>11</u>	<u>06</u>	<u>17</u> (1)
SprayPaint	Memo	0.00							
Spray Painting	1-Prime inside and outside crosstube as per QSI 005 4.2								
	2-Paint outside crosstube with White Imron as per QSI 005 4.2								
	PRIME:								
	Start Time: <u>7:00</u>								
	Finish Time: <u>8:00</u>								
	PAINT:								
	Start Time: <u>12:00</u>								
	Finish Time: <u>1:00</u>								
220		0.00							
	QC14- Inspect Spray Paint					<u>25</u>	<u>11</u>	<u>06-23</u>	
QC	Memo	0.00							
Quality Control	Wrap in plastic bag to protect from scratches								

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230  Crosstubes	Crosstubes	0.00				<u>M</u>	<u>11</u>	<u>06</u>	<u>23</u> ①
Crosstubes	Memo (ASSEMBLE AS PER DWG D206-667-143) 1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft holes should be facing up. <u>A/R Magnobond 6398: 117510</u> <u>Pro Seal</u> 2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-100 in lb 3-Install nut plates as per Dwg D206-667-143. <u>Touch-up rivet heads with Imron paint.</u> <u>W 11 06 27</u> ①	0.00							
240  QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							④

W/O:		WORK ORDER CHANGES					
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Customer:


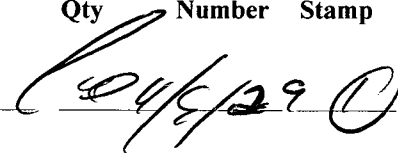





Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250  Packaging Packaging	Pick Kit Memo	0.00 0.00							
260  QC Quality Control	QC4- 100% Inspect kits for completeness Memo	0.00 0.00							
270  Packaging Packaging	Packaging Memo Identify and pack for shipping as per PPP D206-667-103 Location: _____ PPP Rev: 	0.00 0.00							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan Accept Reject Reject Insp.
Code Qty Qty Number Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

POSITIVE RECALLEFFECTIVE 11.06.11 AUTH [Signature]RELEASED [Signature] DATE 11.07.11

NEED DSI FROM ENG.

ME
11-06-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Picklist Print

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Page 1

Work Order ID: 69577

Parent Item: D206-667-103

Parent Item Name: Crosstube Fwd



Start Date: 5/12/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:F 05.09.01 Add holes for compatibility with Bell Skidtubes KJ/JLM
 IPP Rev:G 08-06-03 update as per DSI9415 (ECN1198) DD verified by:
 IPP Rev:H 08.11.17 QC5 was QC6 at step 12 KJ verified by: EC
 IPP Rev:I 08-12-15 add magnobond DD verified by:EC
 IPP Rev J 09.01.06 ECN 08-562 EC verified by: DD
 IPP Rev:K 09-01-19 as per DSI9439 DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D206-667-103TRN

Manufactured

No

110

Each

2.0000

1

1



Crosstube Turning DetailL



SAD 11-06-07

Location

Loc Qty

Loc Code

FG

1

67573

1

LG

1

67572

1

D2873-043

Manufactured

No

230

Each

40.0000

2

2



Nut Plate Assembly



11-06-27

Location

Loc Qty

Loc Code

LG

36

68084

16

68801

20

LG052

4

66898

4

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

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Parent Item Name: Crosstube Fwd

Start Date: 5/12/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D2873-045

Manufactured No

230 Each

35.0000

2

2



Nut Plate Assembly



11.06.27

Location

Loc Qty

Loc Code

LG

20

68800 x 1

20

LG052

15

65992

5

67741 x 1

10

D2891-1

Manufactured No

230 Each

14.0000

2

2



2.25 Support



11.06.23

B# 70734

Location

Loc Qty

Loc Code

LG052

14

53773

12

62595

2

D3595-063-395

Manufactured No

230 Each

29.0000

4

4



RUBBER CUSHION



11.06.23

Location

Loc Qty

Loc Code

LG055

29

63368

1

65361

28

RUBBER CUSHION .63" x 3.95" (4)

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES						
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Start Date: 5/12/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W8

Purchased

No

230

Each

237.0000

14

14



RIVET



m 11.06.27

LocationLoc QtyLoc Code

LG

100

108521

100

LG051

137

117106

37

117381

100

MS21920-20

Purchased

No

230

Each

64.0000

4

4



Clamp (per MIL-DTL-8783C)



m 11.06.23

LocationLoc QtyLoc Code

LG050

64

116799

18

117279

46

AN5-30A

Purchased

No

250

Each

91.0000

4

4



BOLT



m 11.6003

LocationLoc QtyLoc Code

ST339

91

116003

41

117514

50

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Shop Packet Print

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Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

AN5-32A

Purchased

No

250

Each

176.0000

4

4



Bolt

Location

Loc Qty

Loc Code

ST340

176

115589

51

117161

50

117514

50

117688

25

M116889 36
M117161 10

AN5-7A

Purchased

No

250

Each

297.0000

10

10



Bolt

Location

Loc Qty

Loc Code

ST337

297

116516

47

117313

100

117441

150

117313

AN960JD516

NAS1149D0563J

Purchased

No

250

Each

0.0000

18

18



Washer

AN970-4

Purchased

No

250

Each

95.0000

12

12



Washer

Location

Loc Qty

Loc Code

ST344

14

115936

14

ST349

81

116900

31

117317

50

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Start Date: 5/12/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

MS21042L5

Purchased

No

250

Each

1,279.000

4

4



Nut

Aug 12/11 C

Location

Loc Qty

Loc Code

ST300

1279

116105

319

116548

260

117441

500

117591

100

117611

100

M1/6/105

Thursday, May 12, 2011 1:30:29 PM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

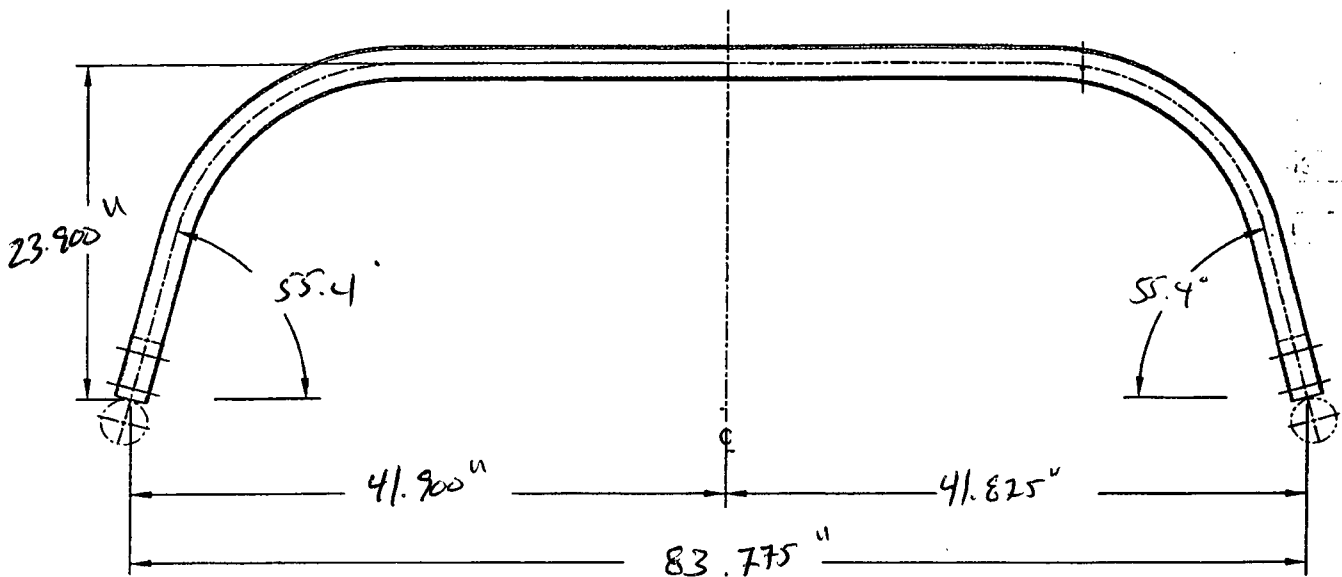
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	69577
Description: Crosstube High Fwd (206L)		Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments

QC15 Inspection	8
Date	11/06/02

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SUMMARY
REVISION
ENGINEERING
UNCONTROLLED
SUBJECT TO A MENDEMENT
WITHOUT NOTICE
WORK ORDER
NO. 49-572

11-05-12

RELEASED

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

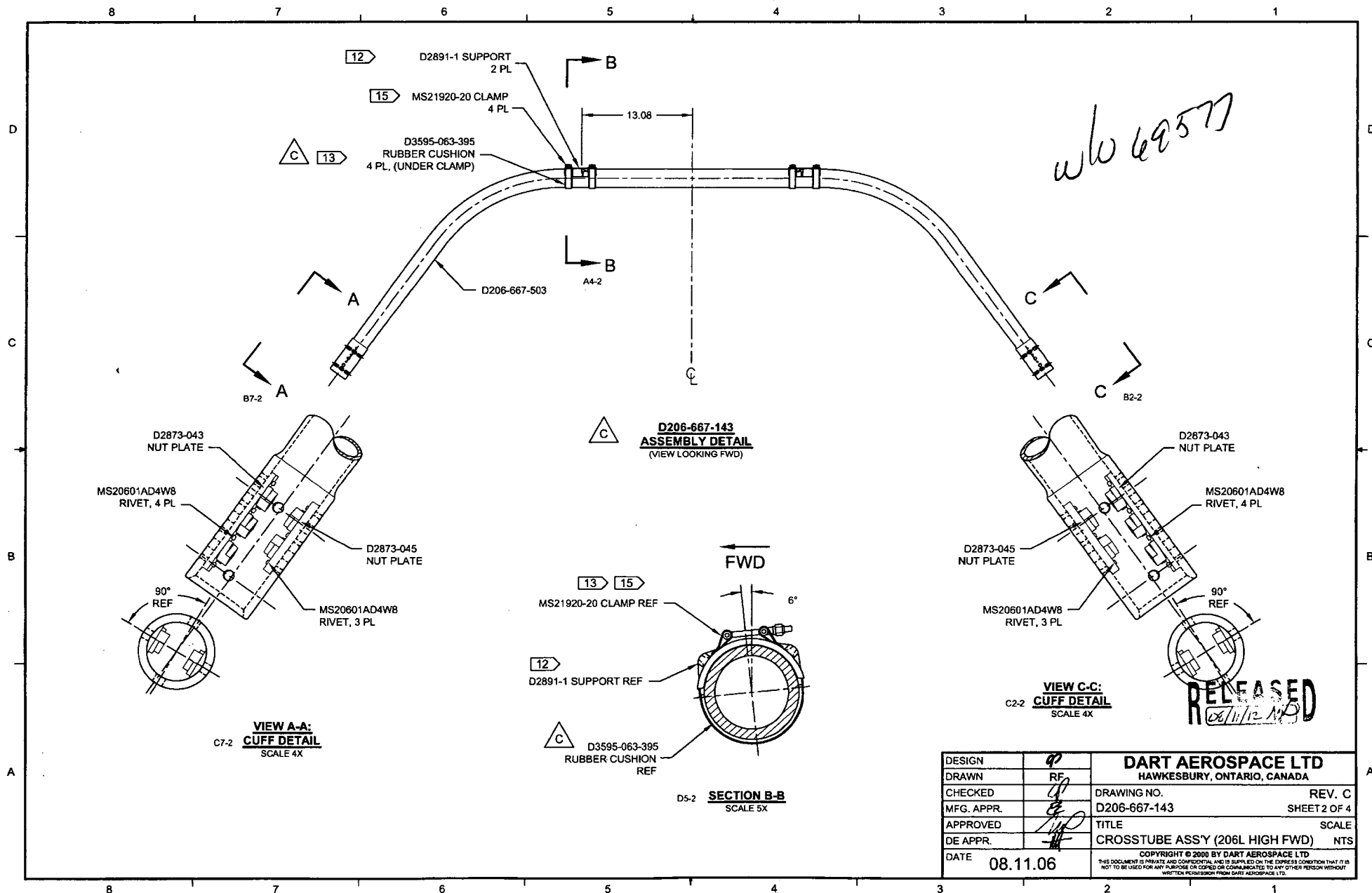
W/O:		WORK ORDER CHANGES					
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	97	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	97	D206-667-143	SHEET 2 OF 4
MFG. APPR.	97	TITLE	SCALE
APPROVED	97	CROSSTUBE ASSY (206L HIGH FWD)	NTS
DE APPR.	97	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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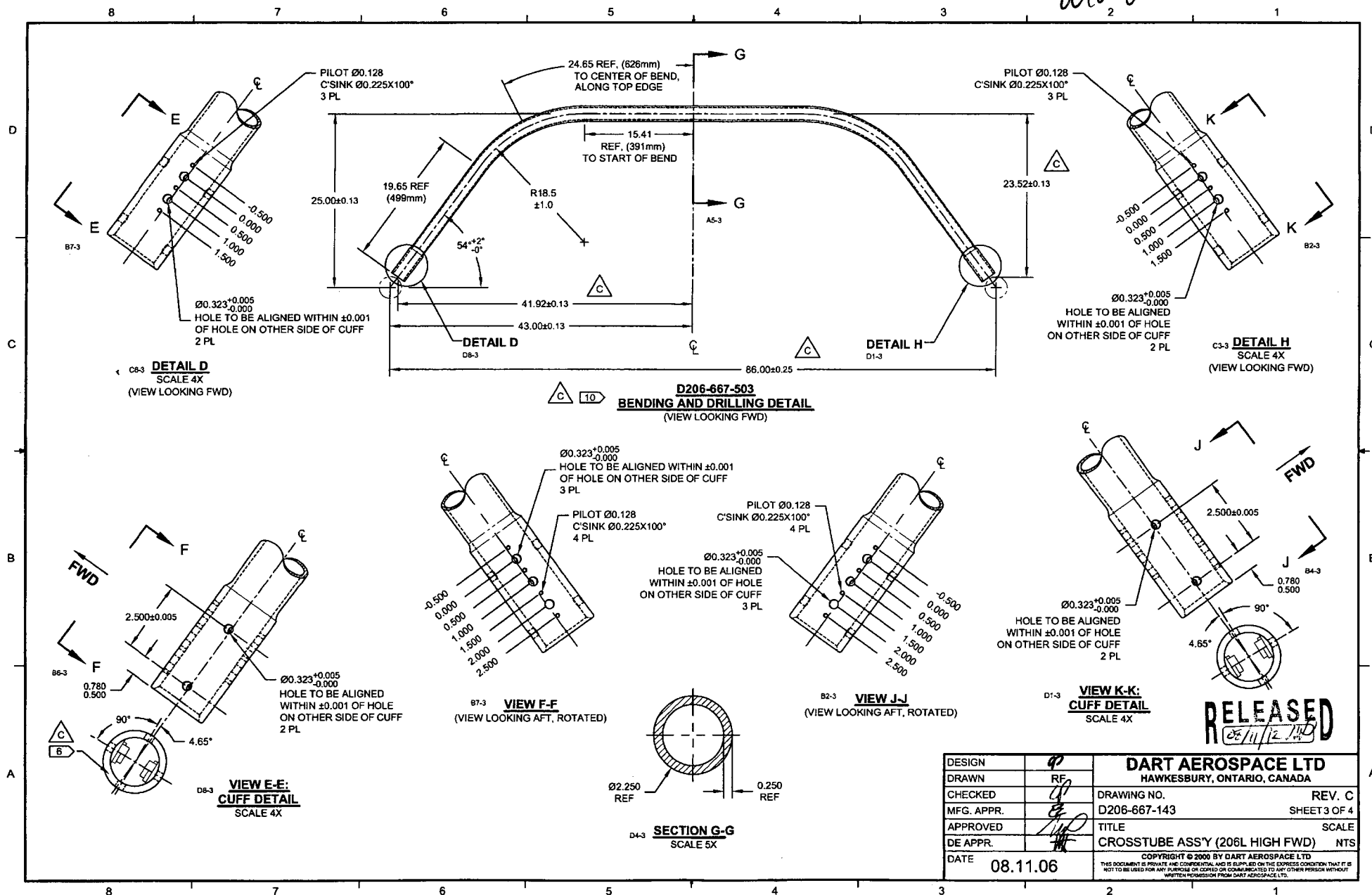
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

also 6957



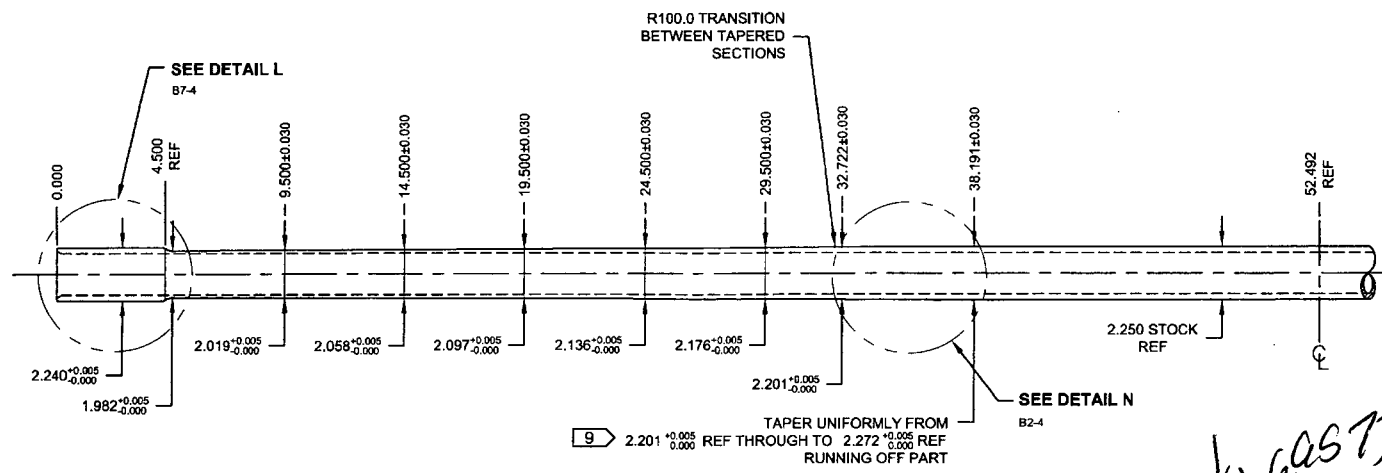
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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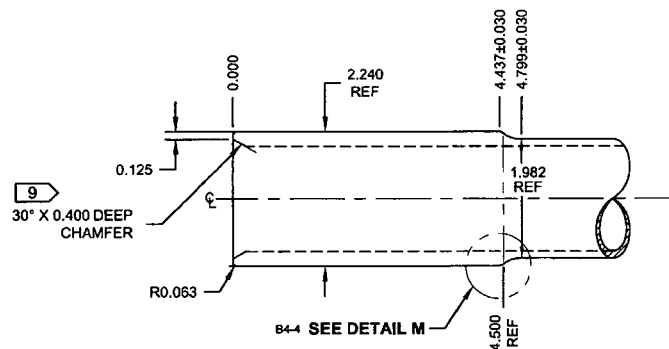
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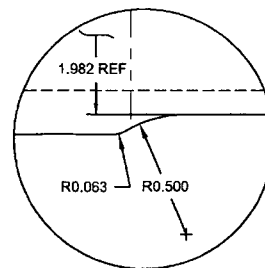
NOTE: Date & initial all entries



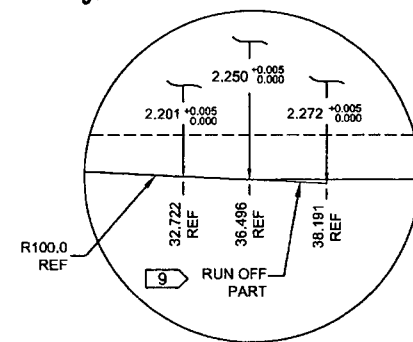
C TURNING DETAIL



**DETAIL L:
CROSSTUBE CUFF**
D7-4 NOT TO SCALE



**DETAIL M:
CUFF TRANSITION**
A6-4 NOT TO SCALE



**DETAIL N:
TAPER RUN-OFF**
C4-4 NOT TO SCALE

RELEASED

DESIGN	40	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	40	DRAWING NO.	REV. C
MFG. APPR.	40	D206-667-143	SHEET 4 OF 4
APPROVED	40	TITLE	SCALE
DE APPR.	40	CROSSTUBE ASSY (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
		X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
			X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
				X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
					X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
						X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1	1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2		1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3			1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4				1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5					1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6						1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10	*2	*2	*2		*2		D2891-1	SUPPORT
11				*2			D2892-1	SUPPORT
12						*1	D2894-1	SUPPORT
13	*4	*4	*4		*4		D3595-063-395	RUBBER CUSHION
14				*4			D3595-063-450	RUBBER CUSHION
15						*2	D3595-075-430	RUBBER CUSHION
16	*4	*4	*4		*4		MS21920-20	CLAMP
17				*4		*4	MS21920-22	CLAMP
18						*2	MS21920-25,	CLAMP (OR MS21920-24)
19	4	4	4		4		AN5-32A	BOLT
20				4		4	AN5-34A	BOLT
21	4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22	8	8	8	8	8	8	NAS1149C0563J	WASHER (OR AN960JD516)
23						*2	D3190-1	CHAFING SHIELD
40	*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41	*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42		2					D2872-043	NUT PLATE
43		2					D2872-045	NUT PLATE
44	10		10				AN5-7A	BOLT
45		10		10	10	10	AN5-10A	BOLT
46	4	10	4		4		AN5-30A	BOLT
47				4		4	AN5-32A	BOLT
48			12				AN970-4	WASHER (OPTIONAL)
49		6					MS21042L5	NUT (OR MS21042-5)
50	10	12	10	10	10	10	NAS1149C0563J	WASHER (OR AN960JD516)
60		1					D3039-3	CENTER DRILL (TOOLING, NOT INSTALLED)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/-143/-241/-243 & D407-667-145/-245
ASSEMBLIES ABOVE

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Revision: D

Date: 11.05.01



LIQUID PENETRANT TEST REPORT

P- 05616.

CLIENT DART AEROSPACE DATE JUNE 16/21 PAGE 1 OF 1
ATTENTION WILDA / CHARITACE / ID / I / MATT ACUREN JOB NO. 188-11-02144 TIME AM ☒ PM ☐
ADDRESS D70, ABERDEEN RD POWO NO. 14300
HALL KESBURY, GU WORK LOCATION AS ADDRESS
ACCEPTANCE STD. ASTM A1705-03 REV./DATE 2005
PROJECT WET FLUORESCENT LIQUID PENETRANT ON 4 "CROSSTUBES"
ITEM(S) EXAMINED - SEE BELOW

JOB DESCRIPTION PERFORMED A WET FLUORESCENT L.P.I. ON 100% OF THE EXTERNAL SURFACE
PROCEDURE NO. LT-002 REV./DATE 2008 TECHNIQUE NO. LT-002 REV./DATE 2008
PART NO. ALUMINUM MATERIAL ALUMINUM THICKNESS N/A
SCOPE ON 4 "CROSSTUBES"

TEST DETAILS
METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MCDAEL-X BLACK LIGHT S/N 13798 ☐ OUTPUT > 1000 μ W/cm² ☒ AMBIENT < 2 fc
PENETRANT ZL-67 MINIMUM DWELL TIME 10 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER 1130 MINIMUM DRY TIME >10 MIN. OTHER
DEVELOPER SID-33 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N 1116/10/20
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY CAL DUE DATE 11/16/21

TEST SURFACE
SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- (☐ METRIC ☐ IMPERIAL)

1 CROSSTUBE W.O. ID 69577 ✓
2 " W.O. ID 69578 ✓
3 " W.O. ID 68454 ✓
4 " W.O. ID 68455 ✓

ITEM ID D206-667-103 FWD
" ID D206-667-103 FWD
" ID D407-667-105 FWD
" ID D407-667-105 FWD

NO RELEVANT INDICATION WAS DETECTED
AS PER APPLICABLES STANDARD

11.06.17

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE Matthew Mordant PRINT Matthew Mordant SIGNATURE DTR # 244631
TECHNICIAN (SIGNATURE): Stives Desresier REPORT REVIEWED BY:
NAME (PRINT): Stives Desresier NAME INITIALS
1ST TECHNICIAN 2ND TECHNICIAN
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL 2 SNT LEVEL 2
CGSB REG. NO. 3049 CGSB REG. NO. 3049

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